LAB 4

NAME: Sreenidhi Ganachari

REGNO:19BCE7230

LAB: CSE4002 Mobile Application Development LAB

Design a calculator to perform addition, subtraction, multiplication and division. Also a 'C' button to clear the Value in the Textbox and '=' button to display the result.

MainActivity.Java

```java
package com.example.calculator;

import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;

import android.view.View; import android.widget.Button; import android.widget.TextView;


public class MainActivity extends AppCompatActivity

{

    int res = 0;

    int temp = 0;

    String t,r,op;

    @Override

    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState); setContentView(R.layout.activity_main);

        TextView t1 = findViewById(R.id.edittext);

        Button  bc = findViewById(R.id.bc);
```

```java
Button  be = findViewById(R.id.be);

 Button b0 =  findViewById(R.id.b0);

 Button b1 = findViewById(R.id.b1);

Button  b2 = findViewById(R.id.b2);

 Button b3 = findViewById(R.id.b3);

 Button b4 = findViewById(R.id.b4);

Button  b5 = findViewById(R.id.b5);

Button  b6 = findViewById(R.id.b6);

Button  b7 = findViewById(R.id.b7);

Button  b8 = findViewById(R.id.b8);

Button  b9 = findViewById(R.id.b9);

Button  ba = findViewById(R.id.ba);

Button  bs = findViewById(R.id.bs);

 Button  bm = findViewById(R.id.bm);

Button  bd = findViewById(R.id.bd);




  b0.setOnClickListener(new View.OnClickListener() { @Override

  public void onClick(View v) {

      t = t1.getText().toString(); r = t + "0";

      t1.setText(r);

  }

  });



  b1.setOnClickListener(new View.OnClickListener() {

  public void onClick(View v) {
```

```java
        t = t1.getText().toString(); r = t + "1";

        t1.setText(r);

    }

});



b2.setOnClickListener(new View.OnClickListener() {

public void onClick(View v) {

    t = t1.getText().toString(); r = t + "2";

    t1.setText(r);

}

});



b3.setOnClickListener(new View.OnClickListener() {


public void onClick(View v) {

    t = t1.getText().toString(); r = t + "3";

    t1.setText(r);

}

});



b4.setOnClickListener(new View.OnClickListener() {

public void onClick(View v) {

    t = t1.getText().toString(); r = t + "4";

    t1.setText(r);

}

});
```

```java
b5.setOnClickListener(new View.OnClickListener() {

public void onClick(View v) {

    t = t1.getText().toString(); r = t + "5";

    t1.setText(r);

}

});


b6.setOnClickListener(new View.OnClickListener() {

public void onClick(View v) {

    t = t1.getText().toString(); r = t + "6";

    t1.setText(r);

}

});


b7.setOnClickListener(new View.OnClickListener() {

public void onClick(View v) {

    t = t1.getText().toString(); r = t + "7";

    t1.setText(r);

}

});


b8.setOnClickListener(new View.OnClickListener() {

public void onClick(View v) {

    t = t1.getText().toString(); r = t + "8";

    t1.setText(r);
```

```java
        }
    });


    b9.setOnClickListener(new View.OnClickListener() {

    public void onClick(View v) {

        t = t1.getText().toString(); r = t + "9";


        t1.setText(r);

    }
    });


    ba.setOnClickListener(new View.OnClickListener() {

    public void onClick(View v) { op = "+";

        temp = Integer.parseInt(t1.getText().toString()); t1.setText("");

    }
    });


    bs.setOnClickListener(new View.OnClickListener() {

    public void onClick(View v) { op = "-";

        temp = Integer.parseInt(t1.getText().toString()); t1.setText("");

    }
    });


    bd.setOnClickListener(new View.OnClickListener() {

    public void onClick(View v) { op = "/";

        temp = Integer.parseInt(t1.getText().toString()); t1.setText("");
```

```java
            }

        });


        bm.setOnClickListener(new View.OnClickListener() {

        public void onClick(View v) { op = "*";

            temp = Integer.parseInt(t1.getText().toString()); t1.setText("");

        }

        });


        bc.setOnClickListener(new View.OnClickListener() {

        public void onClick(View v) { temp =  0; t1.setText("");

        }

        });


        be.setOnClickListener(new View.OnClickListener() {

        public void onClick(View v) { if (op.equals("+")) {

            res = temp + Integer.parseInt(t1.getText().toString());
t1.setText(String.valueOf(res));

        }

        else if (op.equals("-")) {

            res = temp - Integer.parseInt(t1.getText().toString());


            t1.setText(String.valueOf(res));

        }

        else if (op.equals("/")) {

            res = temp / Integer.parseInt(t1.getText().toString());
t1.setText(String.valueOf(res));
```

```java
            }

        else if (op.equals("*")) {

                res = temp * Integer.parseInt(t1.getText().toString());
t1.setText(String.valueOf(res));

            }

        }

        });

    }

}
```

XML Code

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/edittext"
        android:layout_width="347dp"
        android:layout_height="0dp"
        android:layout_marginTop="93dp"
        android:layout_marginBottom="51dp"
        android:textAlignment="viewEnd"
        android:textSize="30sp"
        app:layout_constraintBottom_toTopOf="@+id/ba"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.421"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/b1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```
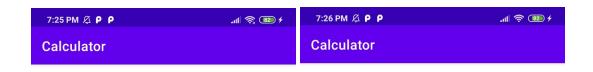
```xml
    android:layout_marginStart="1dp"
    android:layout_marginEnd="2dp"
    android:text="1"
    app:layout_constraintBaseline_toBaselineOf="@+id/b2"
    app:layout_constraintEnd_toStartOf="@+id/b2"
    app:layout_constraintStart_toStartOf="parent" />

<Button
    android:id="@+id/b2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginEnd="3dp"
    android:text="2"
    app:layout_constraintEnd_toStartOf="@+id/b3"
    app:layout_constraintStart_toEndOf="@+id/b1"
    app:layout_constraintTop_toTopOf="@+id/b3" />

<Button
    android:id="@+id/b3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginEnd="3dp"
    android:text="3"
    app:layout_constraintBaseline_toBaselineOf="@+id/ba"
    app:layout_constraintEnd_toStartOf="@+id/ba"
    app:layout_constraintStart_toEndOf="@+id/b2" />

<Button
    android:id="@+id/ba"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginBottom="15dp"
    android:text="+"
    app:layout_constraintBottom_toTopOf="@+id/bs"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/b3"
    app:layout_constraintTop_toBottomOf="@+id/edittext" />

<Button
    android:id="@+id/b4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginEnd="3dp"
    android:text="4"
    app:layout_constraintBaseline_toBaselineOf="@+id/b5"
    app:layout_constraintEnd_toStartOf="@+id/b5"
    app:layout_constraintStart_toStartOf="parent" />

<Button
```
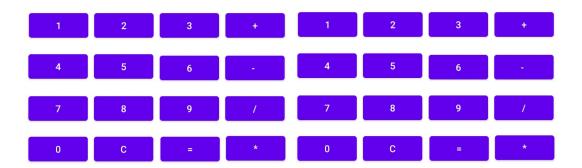
```xml
        android:id="@+id/b5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginEnd="3dp"
        android:layout_marginBottom="2dp"
        android:text="5"
        app:layout_constraintBottom_toBottomOf="@+id/b6"
        app:layout_constraintEnd_toStartOf="@+id/b6"
        app:layout_constraintStart_toEndOf="@+id/b4" />
<Button
        android:id="@+id/b6"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginEnd="3dp"
        android:text="6"
        app:layout_constraintBaseline_toBaselineOf="@+id/bs"
        app:layout_constraintEnd_toStartOf="@+id/bs"
        app:layout_constraintStart_toEndOf="@+id/b5" />

<Button
        android:id="@+id/bs"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="12dp"
        android:text="- "
        app:layout_constraintBottom_toTopOf="@+id/bd"

        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toEndOf="@+id/b6"
        app:layout_constraintTop_toBottomOf="@+id/ba" />

<Button
        android:id="@+id/b7"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginEnd="3dp"
        android:text="7"
        app:layout_constraintBaseline_toBaselineOf="@+id/b8"
        app:layout_constraintEnd_toStartOf="@+id/b8"
        app:layout_constraintStart_toStartOf="parent" />

<Button
        android:id="@+id/b8"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginEnd="3dp"
        android:text="8"
        app:layout_constraintEnd_toStartOf="@+id/b9"
        app:layout_constraintStart_toEndOf="@+id/b7"
```

```xml
        app:layout_constraintTop_toTopOf="@+id/b9" />

    <Button
        android:id="@+id/b9"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginEnd="3dp"
        android:text="9"
        app:layout_constraintBaseline_toBaselineOf="@+id/bd"
        app:layout_constraintEnd_toStartOf="@+id/bd"
        app:layout_constraintStart_toEndOf="@+id/b8" />

    <Button
        android:id="@+id/bd"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="11dp"
        android:text="/"
        app:layout_constraintBottom_toTopOf="@+id/bm"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toEndOf="@+id/b9"
        app:layout_constraintTop_toBottomOf="@+id/bs" />

    <Button
        android:id="@+id/b0"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="1dp"
        android:layout_marginTop="12dp"
        android:layout_marginEnd="4dp"
        android:text="0"
        app:layout_constraintEnd_toStartOf="@+id/bc"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/b7" />
    <Button
        android:id="@+id/bc"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginEnd="5dp"
        android:text="C"
        app:layout_constraintBaseline_toBaselineOf="@+id/b0"
        app:layout_constraintEnd_toStartOf="@+id/be"
        app:layout_constraintStart_toEndOf="@+id/b0" />

    <Button
        android:id="@+id/be"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="1dp"
```

```xml
            android:layout_marginEnd="4dp"
            android:text="="
            app:layout_constraintEnd_toStartOf="@+id/bm"
            app:layout_constraintStart_toEndOf="@+id/bc"
            app:layout_constraintTop_toTopOf="@+id/bm" />

    <Button
            android:id="@+id/bm"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginBottom="273dp"
            android:text="*"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toEndOf="@+id/be"
            app:layout_constraintTop_toBottomOf="@+id/bd" />

</androidx.constraintlayout.widget.ConstraintLayout>
```
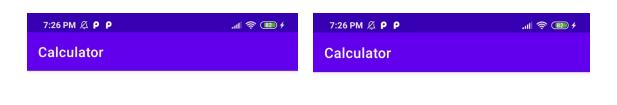
OUTPUT

8

1	2	3	+
4	5	6	-
7	8	9	/
0	C	=	*

1	2	3	+
4	5	6	-
7	8	9	/
0	C	=	*

5

1	2	3	+
4	5	6	-
7	8	9	/
0	C	=	*

13

1	2	3	+
4	5	6	-
7	8	9	/
0	C	=	*